

REMARKS

Claims 1-22 are currently pending. Claims 1, 9-11, 16 and 18 have been amended. New claims 19-22 have been added herein. Support for the claim changes and new claims may be found at least at paragraphs 0031, 0042, 0043, and 0051, and in the original claims, of the originally filed application. The changes to claims 11, 16, and 18 wherein "processor" has been changed to "processor module" are made for readability and are not intended to relate to patentability or to narrow the claim scope. The specification has been amended in several instances to update certain references to U.S. patent literature.

Rejection under 35 U.S.C. § 112, Second Paragraph

The Office Action includes a rejection of claims 9 and 18 under 35 U.S.C. § 112, second paragraph, as allegedly reciting certain language without proper antecedent basis. This rejection is respectfully traversed since claim 1 recites "re-sampling the template frame" and "selecting a first frame of data as a template frame". Thus, claim 1 provides proper antecedent basis for the language in claim 9 of "re-sampling the first frame". However, claim 9 has been amended for readability in this regard to change "first frame" to "template frame". Claim 18 has been similarly amended for readability. These claim amendments are not intended to be related to patentability or to narrow the scope of the claims.

Rejections under 35 U.S.C. § 102

The Office Action includes a rejection of claims 1-3 and 10-12 under 35 U.S.C. § 102(b) as allegedly being anticipated by the Bender et al. patent (U.S.

Patent No. 5,657,402). Independent claims 1 and 10 have been amended, and it is respectfully submitted that these claims are not anticipated by the Bender et al. patent.

Claim 1 recites a method for processing imagery using an Electro-Optical (EO) system. The method comprises steps of selecting a first frame of data as a template frame, capturing a second frame of data using the EO system, correlating at least a portion of the second frame with the template frame to generate a shift vector, and registering the second frame with the template frame by interpolating the second frame using the shift vector and re-sampling at least a portion of the second frame to produce a registered frame. The method also comprises steps of re-sampling the template frame, combining the re-sampled template frame and the registered frame to generate an averaged frame, and selecting another frame of data as an updated template frame to which a subsequently captured frame of data is registered.

As noted at paragraphs 0054 and 0056 of the originally filed application, for example, a method as recited in claim 1 can improve image quality of image data acquired by an electro-optic system, such as a FLIR or vidicon camera, for example, and can increase the effective performance range of the electro-optic system. By updating the template frame as recited in claim 1, successive frames of processed video image output data can be generated and, for example, viewed on a display. Thus, the method recited in claim 1 can generate successive frames of high quality video output data from input image data acquired by an electro-optic system. For example, as recited in new claims 19 and 20, further frames of data can be successively selected to be updated template frames at intervals of a predetermined

number of frames (e.g., every four frames as noted at paragraph 43 of the originally filed application). At a video rate of 60 frames per second, for example, the template frame can be updated multiple times every second, thereby providing successive frames of high quality video output with an effective increase in the performance range of the electro-optic system.

In contrast, the Bender et al. patent discloses a method for generating a still image (see, e.g., Abstract), and there is no disclosure in the Bender et al. patent of updating a template frame as recited in claim 1. More particularly, the Bender et al. patent discloses a method for generating a high resolution, fixed focal length still image from a zoom video sequence, a method for generating a panoramic still image from a plurality of images, and a method for generating a high resolution still image from a plurality of images of a scene taken over a time period (see, e.g., column 1, lines 16-28). In all cases, the Bender et al. patent is concerned with generating a still image, not with processing frames of input image data to produce successive frames of high quality video output data. In addition, there would be no reason for the Bender et al. approach to update a template frame as recited in claim 1 because the Bender et al. patent is not concerned with generating video output data at any video rate. Claim 1 is distinguishable over the Bender et al. patent for at least these reasons, and claim 10 is distinguishable for at least for similar reasons. Withdrawal of the rejection and allowance of claims 1 and 10 are respectfully requested for at least these reasons. Claims 2-9 and 11-18 are allowable at least by virtue of dependency.

Rejections under 35 U.S.C. § 103

Paragraphs 4-7 of the Office Action include rejections of dependent claims 6, 7, 15 and 16, claims 4 and 13, claims 8, 9, 17 and 18, and claims 5 and 14 under 35 U.S.C. § 102(b) as allegedly being unpatentable over the Bender et al. patent in view of various secondary references. These rejections are respectfully traversed at least because the Office's reliance on the secondary references does not make up for the fact that the Bender et al. patent fails to disclose the combinations of features recited in independent claims 1 and 10. Accordingly, claims 4-9 and 5-18 are allowable at least by virtue of dependency.

New Claims

New claims 19-22 have been added herein, support for which may be found at least at paragraphs 0031, 0042, 0043, and 0051, and in the original claims, of the originally filed application. Claims 19 and 20 are allowable at least by virtue of dependency, and allowance of the same is respectfully requested. Moreover these claims are further allowable because they recite additional subject matter not disclosed in the Bender et al. patent.

New claims 21-22 recite certain features in common with claims 1 and 10 and further recite that certain steps are repeated to process subsequently-captured frames of data. Thus, as noted in connection with the discussion of claims 1 and 10, the claimed method can generate successive frames of high quality video output data from input image data acquired by an electro-optic system. In contrast, as noted above, the Bender et al. patent is concerned with generating a still image.

Claims 21-22 are distinguishable over the Bender et al. patent for at least these reasons, and allowance of claims 21-22 is respectfully requested.

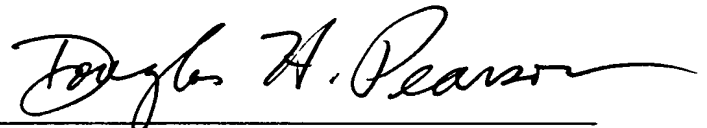
Conclusion

In light of the above, withdrawal of the rejections and allowance of this application are respectfully requested. Should there be any questions in connection with this application, the Office is invited to contact the undersigned at the number below.

Respectfully submitted,

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